| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/842,931 | 04/26/2001 | Kazunobu Uehara | F-6961 | 1189 |

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|---|---|---|
| 7590 11/10/2003 | EXAMINER | |
| Jordan and Hamburg | CASCHERA, ANTONIO A | |
| 122 East 42nd Street | ART UNIT | PAPER NUMBER |
| New York, NY 10168 | 2676 | 5 |

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Office Action Summary | Application No. 09/842,931 | Applicant(s) UEHARA ET AL. | |
|---|---|---|---|---|
| | | Examiner Antonio A Caschera | Art Unit 2676 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 September 2003* .

2a)☒ This action is **FINAL**.          2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) *2,5,10 and 13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-9,11,12 and 14-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All  b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

# DETAILED ACTION

## *Priority*

1.      Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d).  The certified copy has been filed in the pending application.

## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains.  Patentability shall not be negatived by the
> manner in which the invention was made.

2.      Claims 1, 3, 4, 6-9, 11, 12 and 14-22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hayashida et al. (U.S. Patent 6,409,596 B1) in view of Yamashita et al. (U.S.

Patent 5,982,377).

In reference to claims 1, 7 and 9, Hayashida et al. discloses a game device displaying a

game in a virtual space (see lines 4-5 of abstract).  Hayashida et al. discloses performing

projection conversion of polygon coordinates in a three-dimensional space based on matrix

calculations (see column 8, lines 29-36 and columns 8-9, lines 64-6).  Hayashida et al. also

discloses the game system forming images of three-dimensional objects in a viewpoint

coordinate system (see column 8, lines 49-58).  Hayashida et al. discloses a coordinate

conversion unit for receiving vertex coordinates of polygons and conversion matrices data,

converting the vertex coordinates of polygons using the conversion matrices data (see column 8,

lines 49-58). Hayashida et al. discloses an image processing unit synthesizing converted

polygon data located in a frame buffer for display on a TV monitor (see column 9, lines 7-12 and

#115, 116, #6 of Figure 3). Hayashida et al. also discloses the geometrizer unit for fixing the

coordinate system to a view coordinate system in a three-dimensional space (see column 8, lines

57-58) and performing perspective conversion of shape data using conversion matrix data sent

from the CPU (see column 8, lines 54-57). Hayashida et al. does not explicitly disclose reading

out a new plurality of conversion matrices however Hayashida et al. does disclose the CPU

renewing conversion matrix data after the viewpoint is switched (see column 14, lines 58-67)

and therefore the office interprets the renewed conversion matrix data, to be different from

previous matrix data because of viewpoint switching, and further read out by the geometrizer.

Hayashida et al. does not explicitly disclose a plurality of conversion matrices however

Yamashita et al. does. Yamashita et al. discloses a three-dimensional graphic displaying system

and method allowing a viewpoint of a graphic to change when the graphic is rotated or moved

(see lines 1-3 of abstract). Yamashita et al. discloses utilizing six conversion matrices to perform

coordinate conversion processing (see column 10, lines 6-12). Yamashita et al. discloses

multiplying the six matrices together with elements of the first matrix comprising of coordinates

of an original graphic (see column 10, lines 12-31). Note, the office interprets multiplying the

above matrices together substantially similar to the claimed language of applicants claims stating

the matrices are, "...used at the same time..." Yamashita et al. discloses performing the

coordinate conversion process on all coordinate points of the graphic (see column 10, lines 6-10)

which the office interprets as substantially similar to vertex coordinates of applicant's claims as

vertex coordinates are considered included in, "all coordinates of the graphic." Although

Hayashida et al. discloses separate storage units for storing vertex coordinates of polygons and

conversion matrices data (see columns 7-8, lines 67-4 and column 8, lines 49-50) neither

Hayashida et al. nor Yamashita et al. explicitly disclose a storage unit storing at least vertex

coordinates of polygons and data conversion matrices however, at the time the invention was

made, it would have been obvious to one of ordinary skill in the art to store vertex coordinates of

polygons and data conversion matrices in a manner as preferred by the designer or which best

suits the application at hand. Applicant has not disclosed that storing vertex coordinates of

polygons and data conversion matrices in a single storage unit provides an advantage, is used for

a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore,

would have expected Applicant's invention to perform equally well with the separate storage

units of Hayashida et al. because the exact location of where data is stored is seen as a matter of

design choice as preferred by the designer or to which best suits the application at hand.

Therefore, it would have been obvious to one of ordinary skill in this art to modify Hayashida et

al. to obtain the invention as specified in claims 1, 7 and 9. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to implement the gaming display

device and gaming display methods of Hayashida et al. with the coordinate conversion

techniques of Yamashita et al. in order to calculate graphic coordinates of an object which vary

depending on a position of a user viewpoint (see lines 8-11 of abstract). Further, the, "utilization

of a plurality of matrices at the same time," could, ultimately, lead to a conserved amount of

processing cycles and therefore a more efficient processing system when multiple tasks are

performed in parallel. Note, in reference to claim 9, Hayashida et al. also discloses an

information recording medium storing a program that executes the conversion processes (see

column 4, lines 65-67).

In reference to claims 3, 6, 11 and 14, Hayashida et al. and Yamashita et al. disclose all

of the claim limitations as applied to claims 1, 4, 9 and 12 respectively. Although Hayashida et

al. discloses the CPU renewing conversion matrix data after the viewpoint is switched (see

column 14, lines 58-67), Hayashida et al. does not explicitly disclose repeatedly reading out new

conversion matrix data. It would have been obvious to one of ordinary skill in the art at the time

the invention was made to repeatedly read out data of perspective conversion matrices in order to

update matrix conversion calculations, as matrices need to be updated as viewpoints are

constantly switched.

In reference to claims 4, 8 and 12, claims 4, 8 and 12 are similar in scope to claims 1, 7

and 9 and therefore are rejected under similar rationale. Note, Hayashida et al. also discloses

data busses connecting the various hardware units, in particular the shape data ROM (see #111 of

Figure 3) and the conversion matrix storing RAM (see #103 of Figure 3) with the conversion

unit, the geometrizer (see #110 of Figure 3). The office interprets these data lines to be

substantially similar to a transfer unit allowing for the transfer of data from the storage units.

Hayashida et al. also discloses the geometrizer unit for fixing the coordinate system to a view

coordinate system in a three-dimensional space (see column 8, lines 57-58) and performing

perspective conversion of shape data using conversion matrix data sent from the CPU (see

column 8, lines 54-57). Hayashida et al. does not explicitly disclose reading out a new plurality

of conversion matrices however Hayashida et al. does disclose the CPU renewing conversion

matrix data after the viewpoint is switched (see column 14, lines 58-67) and therefore the office

interprets the renewed conversion matrix data, to be different from previous matrix data because

of viewpoint switching and further read out by the geometrizer. Hayashida et al. does not

explicitly disclose transferring the plurality of perspective conversion matrices different from

each other after transferring the polygon coordinate data however at the time the invention was

made, it would have been obvious to one of ordinary skill in the art to transfer data in a certain

way which best suits the application at hand or which is preferred by the designer. Applicant has

not disclosed that transferring the plurality of perspective conversion matrices different from

each other after transferring the polygon coordinate data provides an advantage, is used for a

particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore,

would have expected Applicant's invention to perform equally well with the data transferring

methods of Hayashida et al. because the order in which such above data is transferred provides

no immediate criticality to the application at hand, as seen by the office, since both pieces of data

are needed for the conversion calculation. Therefore, it would have been obvious to one of

ordinary skill in this art to modify Hayashida et al. to obtain the invention as specified in claims

4, 8 and 12. Note, in reference to claim 12, Hayashida et al. also discloses an information

recording medium storing a program that executes the conversion processes (see column 4, lines

65-67).

In reference to claims 15-22, Hayashida et al. and Yamashita et al. disclose all of the

claim limitation as applied to claims 1, 4, 7, 8, 9, 12, 1, 4 respectively above. Yamashita et al.

discloses utilizing six conversion matrices to perform coordinate conversion processing (see

column 10, lines 6-12). Yamashita et al. discloses multiplying the six matrices together with

elements of the first matrix comprising of coordinates of an original graphic data (see column 10,

lines 12-31). This original graphic data is multiplied by the different conversion matrices to

produce converted coordinates (see columns 1-3 of $1^{st}$ matrix in step #S16 of Figure 17 and

column 10, lines 11-16 of Yamashita et al.).


### *Response to Arguments*

3.      Applicant's arguments with respect to claims 1, 4, 7, 8, 9 and 12 have been considered

but are moot in view of the new ground(s) of rejection.

4.      The cancellation of claims 2, 5, 10 and 13 has been noted along with the addition of

claims 15-22.


### *References Cited*

5.      In addition to previous art made of record, the following is further prior art made of

record and not relied upon is considered pertinent to applicant's disclosure:

    a.      Nelson et al. (U.S. Patent 6,037,947)

- Nelson et al. discloses a 3-D graphics accelerator that utilizes a plurality of

  coordinate conversion matrices to produce a stereoscopic image.


### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Antonio Caschera whose telephone number is (703) 305-1391.

The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00

AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella, can be reached at (703)-308-6829.


**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**
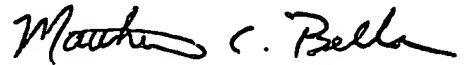
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office  whose telephone

number is (703) 306-0377.


aac

10/29/03

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600